



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/564,889

02/07/2006

Andreas Kramer

126440

2244

27049 7590 02/08/2011
OLIFF & BERRIDGE, PLC
P.O. BOX 320850
ALEXANDRIA, VA 22320-4850

EXAMINER

TOSCANO, ALICIA

ART UNIT

PAPER NUMBER

1766

NOTIFICATION DATE

DELIVERY MODE

02/08/2011

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

OfficeAction27049@oliff.com
jarmstrong@oliff.com

Office Action Summary	Application No. 10/564,889	Applicant(s) KRAMER ET AL.	
	Examiner ALICIA TOSCANO	Art Unit 1766	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5,8-11,13-24 and 27-31 is/are pending in the application.
- 4a) Of the above claim(s) 24,26 and 28-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5,8-11, 13-23, 27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. As previously set forth: *Claims 1-5, 7-11, 13-23, 33 are objected to because of the following informalities: the language of “terminated with isocyanate groups after removal of the terminal isocyanate groups”, found in all of the independent claims above, does not limit the claims. One cannot have a terminal isocyanate group after removing said isocyanate group.*

2. Applicant traverses the objection because the definition of the claims accurately reflects the product.

The Examiner disagrees. Though the Examiner understands what Applicant is trying to claim, the wording of the claims is inappropriate. Language such as “Y₁ is derived from a linear or branched polyurethane” would be more appropriate. Since the formula present in the claims can only be obtained by the reaction of a terminal isocyanate group, the current language does not clarify or limit the formula. A more concise description is required. Appropriate correction is required.

3. Objection over Claims 8-9, 11 is overcome by amendment.

4. Objection over Claim 11 is overcome by amendment.

5. Claims 1-5, 8-11, 13-23 are objected to because of the following informalities: the term “polyphenol” and the polyphenol species therein are not commensurate with

the term polyphenol. "poly" is defined as more than one. A phenol compound is defined as a hydroxyl functional benzene ring. A polyphenol is commonly recognized in the art as a moiety with more than one phenol group (such as bisphenol A which has 2 hydroxy functional benzene rings). Multiple compounds of the list of claim 1 do not have more than one phenol groups (i.e. 1,4-dihydroxybenzene only has one phenol group). As long as the phenol of the references meets one of the compounds of the list the "polyphenol" requirements will be deemed met. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1-5, 8-11, 13-17, 19-23, 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lu (US 6740192) in view of Merz (US 2002/0007003).

This rejection is as set forth in the action dated 9/21/10, reiterated below in its entirety. Cancelled claims are removed. Claim 27 is added to the preamble. It was addressed on page 7 of the action dated 9/21/10, and mistakenly forgotten in the preamble of the rejection. Regarding the amendments to claim 1: Lu discloses the use of the product of alkylene oxides and phenol-formaldehyde in Column 9 line 35. Phenol-formaldehyde prepolymers are novolacs, thusly the phenol-formaldehyde of Lu is a novolac resin. The resin has a –OH value of 2-3 (Column 8 line 19). When forming the phenol-formaldehyde resin, one is reacting an oligomer having 2 or 3 –OH groups with additional phenol (and formaldehyde) moieties. This resin thusly meets the

Art Unit: 1766

“diphenols...prepared by reacting phenols...with...phenol novolacs” of the claim. The polymer B requirements amended into claim 1 are from cancelled claim 7 and have been addressed in the previous rejection. As such all amendments are met by Lu v. Merz. See remarks below.

Lu discloses electroconductive materials with electroconductive adhesive containing epoxide modified polyurethanes. The epoxide modified polyurethane may be the reaction of a polyalkylene oxide modified phenol-formaldehyde resin (Column 9 line 35), or an active hydrogen containing compound, and an isocyanate. The alkylene oxide modified phenol-formaldehyde resin meets the Ar1 requirements of the claims. It also meets the Y3 requirements of the claims. The active hydrogen containing compound is reacted with the isocyanate to form an isocyanate terminated product. This product is further reacted with an epoxy compound to form an epoxy terminated compound that meets the requirements of polymer B of claim 1. There is no structural different required between epoxide adduct A and polymer B, thusly the polymer also meets the epoxide adduct A of claim 1. Alternatively, a second epoxy resin may be included which may be a bisphenol-epichlorohydrin product (see the formula that bridges the top of Columns 15 and 16), or any of the other epoxy compounds disclosed in Columns 12-16. Curing agents are disclosed in Column 11 lines 5-30 and Column 15 lines 40-Column 16 line 54.

Lu includes elements as set forth above. Lu meets the requirements of adduct A, polymer B and curing agent D, as set forth above. Lu does not disclose the use of thixotropic agents, as further required by the claim.

Merz discloses thixotropic agents for one-component adhesives and sealents. The thixotropic agents are suitable for any crosslinking system, including epoxy crosslinking systems (i.e. the system of Lu) [0010]. Merz discloses thixotropic agents comprising 5-50% of a urea derivative [0011] in a carrier solvent of block isocyanate polymers [0014]. Though the amount of agent added to an adhesive is not specifically disclosed, the Examples exemplify the use of about 25 wt%. The agent is the reaction product of an aromatic diisocyanate and an aliphatic amine [0011]. The thixotropic agents give no-sag, migration free adhesive products.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Lu the use of the thixotropic agents, as taught by Merz, in order to improve the sag and migration performance of the adhesive.

As such all elements of claim 1 are met. The bisphenol A-epichlorohydrin product discussed above is obtainable from an aromatic alcohol (bisphenol A) and a diglycidyl ether (a bisphenol A-epichlorohydrin product which is not completely polymerized), as required by claim 2, the dicarboxylic acid of claim 3 is optional and bisphenol A-glycidyl ethers are as above, as required by claim 3, bisphenol A meets the requirements of claim 4, since the composition requirements are met and since the polymers are mixed together the soluble and dispersible requirements of claim 5 are deemed met. The reaction discussed above involves a polyphenol (the phenol-

Art Unit: 1766

formaldehyde resin), a isocyanate reactive polymer (the phenol-formaldehyde resin) and a polyisocyanate, the phenol-formaldehyde is modified by alkylene oxides, forming polyalkylenepolyol derived linkages, as required by claim 8, since ethylene oxide, propylene oxide, butylene oxide and THF are the exemplified alkylene oxides used for the polyethers of the composition, it is the Examiner's position one would immediately envisage using them for modifying the phenol-formaldehyde resin, as required by claim 9. A MW of the active hydrogen compounds is not disclosed, however an example of such is disclosed in Ex 1 using a active hydrogen compound of PolyTBF 2000, having a MW of approximately 2000, thusly based on NCO-groups it has a MW of 1000. Since this is an exemplified MW of the active hydrogen compound it is the Examiner's position one would use it when using the alkylene oxide phenol-formaldehyde resin, as required by claim 10, the isocyanates of Column 7 lines 20-30 meet the requirements of claim 11, the composition of Ex 2 comprises 13 wt% polyurethane resin, as required by claim 13. The thixotropic agent discussed above meets the requirements of claims 14-17. The curing/crosslinking agent is added in an amount ranging 1-50 wt% of the composition (Column 11 line 30), as required by claim 19. In light of the overlapping nature of this range with the claimed range, a prima facie case of obviousness exists over the claimed range. Fillers may be added in amounts ranging 5-95 wt% of the composition (Column 3 line 21), as required by claim 21. In light of the overlapping nature of this range with the claimed range, a prima facie case of obviousness exists over the claimed range. The adduct A and the polymer B meet the requirements of claim 22, alternatively and additionally, glycidyl ether diluents are disclosed in Column

Art Unit: 1766

16 line 67, as required by claim 22. Since the composition requirements are met the properties of claim 23 are deemed inherent. The properties are drawn to a future intended (cured) use. If there is any difference between the above composition and the composition of the instant claims the difference would have been minor and obvious. "Products of identical chemical composition can not have mutually exclusive properties." A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. See MPEP 2112.01(I) , In re Best, 562 F2d at 1255, 195 USPQ at 433, Titanium Metals Corp v Banner, 778 F2d 775, 227 USPQ 773 (Fed Cir 1985), In re Ludtke, 441 F2d 660, 169 USPQ 563 (CCPA 1971) and Northam Warren Corp v D F Newfield Co, 7 F Supp 773, 22 USPQ 313 (EDNY 1934).

The composition set forth above meets the requirements of claim 27.

Remarks:

Applicant argues the bisphenols and trisphenols (i.e. polyphenol) of claim 1 are not met. Applicant argues Lu discloses phenol-formaldehyde resins but does not disclose the use of polyphenols being one of bisphenols or trisphenols. Applicant argues Merz does not provide any rationale for producing polymer B of the claims.

The Examiner disagrees. Clarification is needed for the "bisphenols" and "trisphenols" of the claims, since 1,4-dihydroxybenzene does not meet the standard definition of bisphenol or trisphenol. As such, the Examiner has put forth the position that as long as a "polyphenol" component from the list of claim 1 is disclosed by the

Art Unit: 1766

reference, the polyphenol requirements of the claim are met. The phenol-formaldehyde resin is produced, by definition, by the reaction of phenol with formaldehyde. The end product has a hydroxyl value of 2-3. As such it meets the "diphenols...prepared by reacting phenols...with...phenol novolacs...having an OH functionality of from 2-3.5". Merz is merely used to teach thixotropic agents. Proper motivation to combine has been set forth (i.e. in order to improve the sag and migration performance of the adhesive), as such all elements of the claims are met and the rejection stands as set forth above.

7. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lu in view of Merz in further view of Kaji (WO 0248235, US 6903180 is used as an equivalent English translation of '235).

This rejection is as set forth in the rejection dated 9/21/10, reiterated below in its entirety. See remarks below.

Lu and Merz include elements as set forth above. Lu discloses crosslinking agents such as tetrahydrophthalic anhydride, phthalic anhydride and the like (Column 11 lines 19-20). Lu does not disclose the agents of claim 18.

Kaji discloses reaction compositions of epoxy resins, a similar composition and reaction product as in Lu. Kaji discloses crosslinking curing agents such as dicyandiamide (Column 4 line 64), phthalic anhydride, tetrahydrophthalic anhydride

Art Unit: 1766

and the like (Column 5 lines 15-16). Kaji thusly teaches the functional equivalence of the above agents for a similar reaction to that taught in Lu.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Lu and Merz the use of dicyandiamide, as taught by Kaji, since it is recognized in the art as a functional equivalent to those agents taught by Merz.

Remarks:

Applicant argues Kaji does not remedy the deficiencies of Lu and Merz.

Applicant argues Kaji merely discloses the curing agent and Kaji does not disclose the polymer B of the instant claims.

The Examiner disagrees. Polymer B of the claims is met by Lu, as set forth above. Proper motivation to combine has been set forth (i.e. to include in Lu and Merz the use of dicyandiamide, as taught by Kaji, since it is recognized in the art as a functional equivalent to those agents taught by Merz), as such the rejection is found proper and stands.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALICIA TOSCANO whose telephone number is (571)272-2451. The examiner can normally be reached on M-F 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1766

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ALICIA TOSCANO/
Examiner, Art Unit 1796